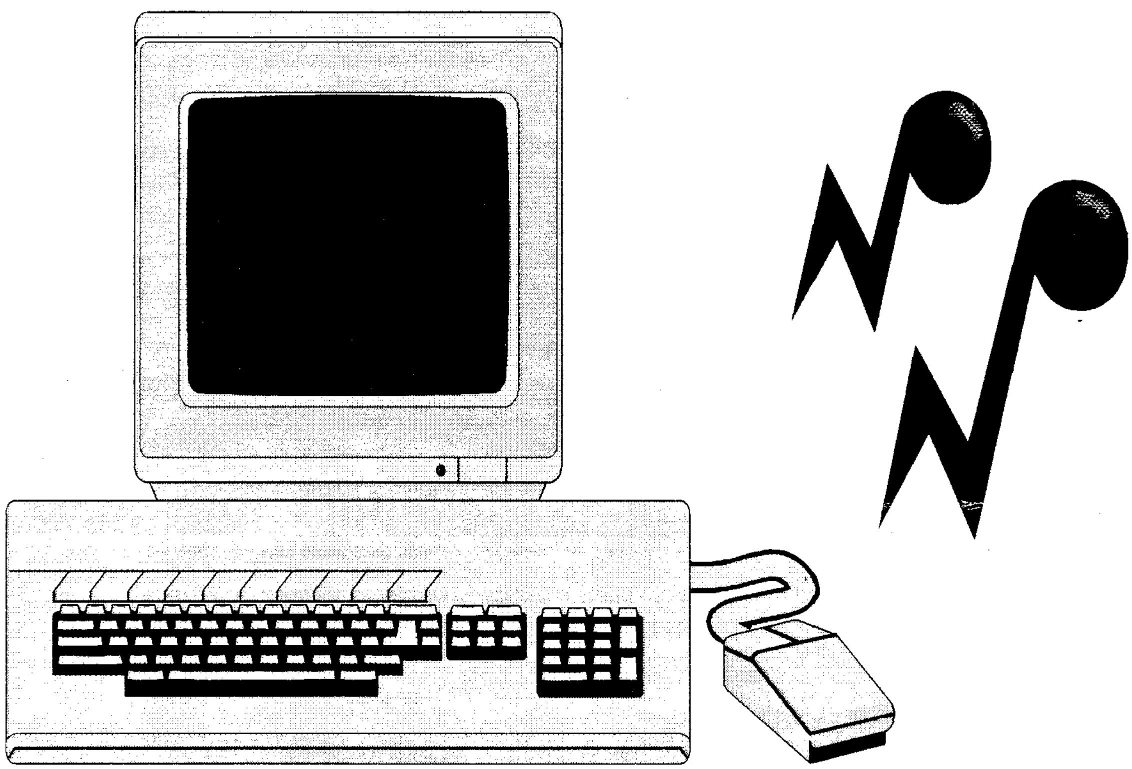
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HBO ATARI USERS' GROUP

GAZETTE

The Hamilton, Burlington, Oakville ATARI Users' Group Newsletter for 8-Bit and ST Atari Systems



The Atari ST As A "Key Note Speaker"

Executive for 1996

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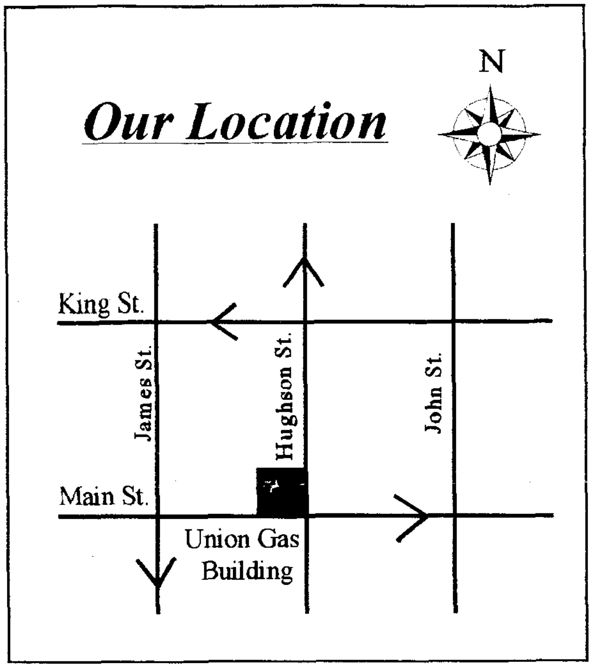
The H.B.O. Gazette is a publication of the Hamilton, Burlington, Oakville, Atari Users' Group P.O. Box 35543 StrathBarton Postal Outlet, Hamilton, Ontario L8H 7S6 E-mail address: ai065@freenet.hamilton.on.ca

Membership

Membership Dues are $20 per person per year or $3 per meeting. The first meeting attended is free! The executive reserve the right to waive this policy for specified meetings. Membership includes a Gazette subscription and enhanced access to the club BBS, H.B.O. Online at (905)573-3704 and preferred pricing of the club public domain disks.

Meetings

Meetings are held in the Blue Flame room in the Union Gas Building basement at 20 Hughson Street South in Hamilton at 7:30 on the Second Tuesday of each month from September to June. There are no summer meeting nights.



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Message from the President

This is an exciting time to own a computer. The Internet has been growing by leaps and bounds. This growth has led to the development of freenets. These "Volks Nets", or peoples nets, have allowed the common person with almost any computer, to log on and take part in this new information revolution.

The words, "Information revolution" may seem like strong words, or techno hype, but it really is true. The Internet is connecting people in a much more dramatic way than BBS's of the recent past have. In the past, only computer literate folk dared purchase a modem. These people had an interest in computers as either neat toys, entertainment devices, or as a tool. Telecommunications was just another neat thing to do, or a way to get new programs. However, today, people who have no interest whatsoever in computers, want to get on to the Internet. Why? When one can get messages to people in Europe for no long distance charges, and get it there in minutes, that is pretty significant.

Unfortunately, there is a bad side effect to this new technology. This could lead to European style by the minute charges for local phone usage. However, this trend must be fought. We must be able to continue to use the phone lines as much as we want, for a low reasonable cost. It may require strong political will in the very near future.

A very interesting phenomenon of the Freenet, at least in Hamilton, is the disbelief by many novices that any Internet access could be "free". Veteran modemers have enjoyed free Bulletin Board Systems for years. Unfortunately, some people who I have encouraged to call the "Freenet" have refused to believe it is truly free and demand to know where the "catch" is. Others are under the false impression that paying for a full Internet service provider is wildly expensive.

At any rate, with non graphical Internet systems like the Hamilton Freenet, Atari users will be "going online" in increasing numbers. And, they will be glad to know that their Atari computer system came along with them!

Sincerely

William M. Moeller

ATARI®

Table of Contents

Next Meetings:
Tuesday April 9, 1996
Tuesday May 14, 1996

H.B.O. Happenings

By William M. Moeller

January saw the election of a new executive for 1996. Unfortunately, only one new face found its way to the executive. We welcome Jeff Hostein as our new ST Vice President. Steve Kinsella declined another year as a member at large. There are currently no members at large. If you would like to help out, it isn't too late! Just see an executive member.

The January meeting was about upgrading your Atari computer. An upgraded ST with an IBM emulator in hardware was shown. Also, memory upgrades were discussed as well as the debate about formatting high density disks on a low density disk drive.

The February meeting was very interesting. The Atari Jaguar 64 bit video game astounded the membership who were unfamiliar with it. Myst as on the High end PC's had breathtaking graphics which operated with alacrity. The VLM was shown playing with some hard rock music, as well as White Men Can't Jump. Many members after seeing this demonstration, are looking to purchase a Jaguar 64 system. Also at the February meeting, SIO2PC for the 8 bit Atari was shown.

Richard Horachek demonstrated Speed script for the 8 bit. The XEP80 80 column adaptor was also shown. Unfortunately, no ST was present. Roger Perrie who was to show word processing on the ST, could not make it unexpectedly.

Work has been progressing on the H.B.O.A.U.G. World Wide Web page. Hopefully, by the time you read this, you will be able to surf by Hamilton (Fuji) mountain! (Say hi to the Yeti!)

The H.B.O.A.U.G. has been spearheading the National Atari Newsletter, to be known as the Canadian Atari News. This quarterly publication, should be in circulation by the beginning of May 1996.

Along with our Web Page, the HBO will have an E-mail address. (As of this writing, our address is ai065@freenet.hamilton.on.ca) This should allow anyone with Internet access to send E-mail to the executive. We are hoping to soon secure the address hbo@freenet.hamilton.on.ca

This is YOUR club. Get involved. With input, we can better serve your Atari needs. With every article received for publication in the Gazette, a free disk from either of the club libraries will be given in exchange. So, if you have an article you have been thinking of writing.....get cracking! The editor needs your help to make the H.B.O. Gazette an "award winning publication" just like the Phoenix from TAF. <grin>

The club has changed the software of H.B.O. Online to BBS Express! ST. Work on the changeover is progressing slowly but surely. Anyone who knows this program, and would like to volunteer as a Sysop, leave Feedback on the BBS.

Call H.B.O. Online at 573-3704

Internet Bits

Relevant Atari Information From Cyberspace

Wed, 14 Feb 1996 23:09:34 comp.sys.atari.8bit
Not With A Bang...
b.poehland@genie.com

The following article is reproduced verbatim from page B6 of the Wall Street Journal, Wednesday February 14, 1996:

ATARI CORP. AGREES TO MERGE WITH JTS, CALIFORNIA-BASED MAKER OF DISK DRIVES

by G. Pasacal Zachary, Staff Reporter of The Wall Street Journal

Atari Corp., one of the great names in computer games, said it agreed to merge with a maker of disk-drives that is run by two legendary high-tech figures.

Under the terms of the deal, JTS Corp., a disk-drive maker based in San Jose, Calif. will emerge as the surviving company, but shareholders of Atari, who must still approve the deal, will hold about 60% of the shares in the new entity. JTS was founded in 1994 by Jugi Tandon, one of the high fliers in the personal-computer industry in the 1980s.

Atari, based in Sunnyvale, Calif., valued the deal at $80

million, although it was unable to provide a per-share value. In American Stock Exchange composite trading yesterday, Atari stock jumped 18.75 cents, or 10%, to close at $2.65 [sic] a share. (Typists' note: The price quoted in this article is in error; the correct closing price as quoted on Nightly Business Report 2/13/96 and reported in the Wall Street Journal 2/14/96 p.C-11 was 2-1/16 or $2.0625 per share. -BLP)

The chief executive officer of JTS is Tom Mitchell, cofounder and former president of Seagate Technology Inc., the world's biggest disk-drive supplier.

In an interview, Mr. Mitchell said that JTS will benefit from a $60 million in cash and cash-equivalents from Atari, which he said has a strong balance sheet but has faced serious difficulties competing against the much- larger computer game companies, Nintendo Co. and Sega Enterprises Ltd.

At least at first, JTS will operate Atari's computer-game business as a subsidiary, but when asked how committed he was to continuing in that business, Mr. Mitchell said, "We'll just see how it goes."

Lee Isgur, an analyst at Jeffries & Co., said the merger could mean the end of Atari's presence in video games. "It could be the end," he said, adding that he expected Atari to keep at least "a low profile" in the computer-game business for the rest of this year.



"On the Internet, nobody knows you're a dog."

But August Liguori, chief financial officer of Atari, said "The name of Atari will continue to be used in the computer-game environment. We still have a wonderful game library and many patents associated with games."

As part of the deal, Atari said it has loaned $25 million to JTS, which will be converted into shares of preferred stock in JTS if the deal isn't completed.

- END -

My opinion on the above, for what it's worth, is that first of all the deal will go through. Warner dumped its 15 million shares of Atari Corp. last year, leaving Jack And The Boys as the major shareholders. What Old Jack wants, Old Jack will get.

The statement by Mr. Liguori is pure hooey. Of course the Atari name will still be used in the video game environment, since thousands of people own Atari products & aren't likely to trash them just because Atari has thrown in the towel. What Mr. Liguori did NOT say was whether the Atari name would continue to be a common sight on store shelves (which is where it counts).

I'm rather curious to know how Atari came by $60 million in cash. Proceeds from the sale of Taiwan factories & skimmings from the advertising budget, no doubt.

It's pretty clear what's happening here. JTS will suck all the cash from the remnants of Atari, then discard the empty carcass like a crumpled Christmas wrapper. You can pretty well bet that people with the likes of Tandon & Seagate in their past have their own agenda & don't give a hoot about some has-been third-rate video game

company floundering in a market hopelessly dominated by the Japanese. Merging with Atari is a quick easy way for these hotshots to get their hands in Old Jack's cookie jar. Kinda like taking candy from an old man. I only wonder what Jack And The Boys will get out of it. (The Boys, of course, are easily bought off with offers of new Ferraris. Or Porsches, whatever.)

Ah well, at least Atari outlasted Old Jack's other company, Commodore Business Machines.

this is the way Atari ends
not with a bang
but with a whimper.

With apologies to t.s. Eliot..........

- Ben Poehland

Area: COMP.SYS.ATARI.8BIT
Nov 95 2:49:53
From: "Ernest.R.Schreurs" <ernest@pi.net>

We are happy to announce the availability of the "POOLDISK" CD-rom for the Atari XL/XE computer. This CD contains the contents of over 2000 diskettes. Everything is stored in the ATR format as used by SIO2PC and APE. This is also compatible with the format used by the Xformer. There are some 250 Megabytes of ATR images on the CD. To accommodate the Atari ST users, all images are also stored in the XFD format as used by the ST-Xformer. This occupies another 250 Mb. These disks include over 250 diskettes from ABBUC, and over 330 from the BELLCOM P.D. library. There are also lots of disks from usergroups, magazines and disk magazines. The Umich.edu 8-bit archive has also been converted to the ATR format and is now stored in over 500 disk image files. There are also some files not in ATR format on the disk, for those that want to try and write an ISO-9660 driver for the XL/XE.

Until someone manages that, you need a PC or an Atari ST to act as a server for your Classic Atari, or one of the emulators. The remaining 100 meg of the CD is filled with 165 pictures from various Atari 8-bit systems and peripherals. This CD is now available from us for US $35, which includes shipping by the cheapest possible rate, which may take over two weeks. Send a check drawn on an US bank to:

Ernest R. Schreurs
Kempenlandstraat 8
5211 VN Den Bosch
The Netherlands

Make checks payable to Ernest R. Schreurs. Do not forget to mention the mailing address, so we know where to send the CD to. If you cannot send a check, US $ 35 in cash is acceptable too, but then it is your own risk. If the money does not arrive, we will not know that you sent any. If the check or the money gets here, we will ship the CD as soon as possible. A few notes: some of the disks are in German, Polish or Dutch. As far as we know, everything on the disk is Public Domain or Shareware, except for the Pokey Magazines and the Mega-Magazines, which are on the CD by permission, and are restricted from further copying. You are responsible for whatever is copied off the CD, if we accidentally placed anything on the CD that is not P.D.. If the Jewel box cracks during shipping, this is your own risk. After all, a new one costs under $1. If you have any questions, send an E-mail to ernest@pi.net

Atari Video Gaming Scene

By Larry Popa

There are more and more new titles coming out for the Jaguar now than ever before. In fact it seems to be as much of a curse as it is a blessing since I just don't have the funds to keep up anymore. In the new releases we have seen Space Ace, Myst, Defender 2000, Baldies, Zoop, NBA Jam, Missile Command 3D, I War, Primal Rage and Battlemorph.

I have had an opportunity to play Defender 2000 recently and in fact I would rather be playing it right now than write this article!

NBA JAM TOURNAMENT EDITION

Jaguar Secret Codes

First of all, to use the cheats, tournament mode must be turned off...

Secret Characters

To access the secret characters, you must enter certain initials at the initial screen (you get there by choosing to record your initials, obviously).

The tricky part is that each initial must be entered with a certain button. "A" means hold Option and use the "A" button. "B" means hold Option and use the "B" button. "C" means to hold Option and use the "C" button to enter the initial. N means to use any button (A, B, or C) will work, and there is no need to hold option.

Character	Initials	Button sequence
Larry Bird	"BRD"	A, C, A
Hugo	"HGO"	A, C, N
Bill Clinton	"CIC"	B, N, A
Adisak	"ALP"	C, B, A
D.J. Jazzy Jeff	"JAZ"	A, A, C
Fresh Prince	"WIL"	N, B, C
Kabuki	"DAN"	A, B, N
Facime	"XYZ"	A, B, B
Air Dog	"AIR"	B, N, C
Rivett	"RJR"	C, A, N
Divita	"SAL"	N, C, A
Blaze	"BLZ"	C, N, C
Benny	"BNY"	C, N, B
Crunch	"CRN"	N, B, A
Gorilla	"GOR"	B, B, N
Prince Charles	"ROY"	N, A, B
Heavy D	"HVY"	B, N, A
Frank Thomas	"SOX"	A, N, B
Mike D.	"MKD"	C, N, C
Adrock	"ADR"	B, C, N
MCA	"MCA"	N, B, B

Baby Bodies

This is pretty cool, I've gotta admit. It's kinda funny watching little babies doing 15-foot dunks. At "Tonight's Match up" screen, enter the following: B, A, B, Up, Down, Left, Right. You won't get any sort of confirmation until the game begins.

Defender 2000: A Review

First Impressions

Absolutely, amazingly, mind-booglingly, fantastic. My jaw fell on the floor and remained there for two days until it was eventually swept up with the rotting remains of a Taco Bell feast that was lying on my floor. Defender 2000 is the third title to be released by Jeff Minter (the venerable guru of psychedelic games) for the Jaguar. Minter is responsible for Tempest 2000, the Virtual Light Machine and now Defender 2000. It features three modes of play: Classic Defender, Defender Plus, and Defender 2000. Classic Defender is a 100% perfect rendition of the original arcade game. Defender Plus is the same as the classic with the addition of psychedelic colours flowing smoothly in an inebriating manner. Defender 2000 is a completely new game with the ships, and people looking like what they're supposed to be, and with beautifully rendered realistic backgrounds.

Graphics: *****

The graphics are all in bold vibrant colours and move incredibly fast and smoothly. Any description that I could possibly write for the graphics of Defender 2000 would only be doing it injustice. It really needs to be seen to be properly appreciated.

Sound: *****

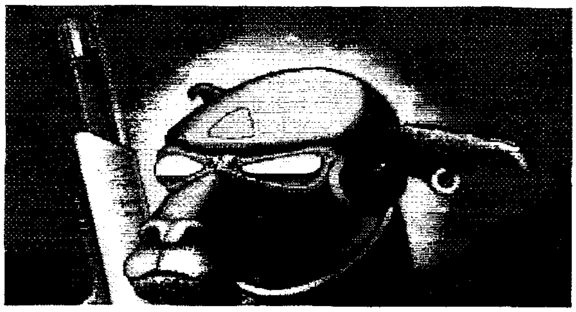
Tempest 2000 had such an amazing musical score accompanying the game that it warranted the production of a CD soundtrack. Defender 2000 lives up to and exceeds the standard set by Tempest 2000. The music is intense, energetic and sets the mood for the game. The sound effects are equally compelling. The little men scream when you shoot them and it says, "Cheers Mate!" when you pick up some of the power ups. Excellent! Excellent! Excellent!

Game Play: *****

The game play is just as good as the sound and the graphics. It's fast, intense, compelling, addictive, and well... you get the point.

Overall: 15/15

What more can I say? She's perfect! This title is one of the few that is worth the $80 it costs for a new cart. As soon as I get the money to purchase it I will.



A "Defender 2000" Llama In Action On The Front

Myst: A Review

First Impressions

Myst has quickly become one of the most popular video game titles of the 1990's, and now it has finally made its appearance on the Atari Jaguar. Myst is an odd surrealistic adventure in which you are sucked into a strange world by a book of all things. This new world seems to be unpopulated but the traces of previous inhabitants are everywhere.

I expected the Jaguar version of Myst to be a bare bones port of the PC version. Boy, was I wrong! I have played the IBM version on a Pentium(tm) with a quad speed CD rom and the whole works and it was slower and less colourful than the Jag version (which is quite pitiful for the IBM since the Jag CD unit is double speed.)

Sound: *****

The sound is very well done in this game and is extremely atmospheric. Eerie music helps contribute to the feeling of being alone in a weird place. The sound effects of the objects in the game are equally well done. You can hear the hiss of the gas furnace, the squeaking of the cast iron wheels, and the insidious laughter of some really crazy guy.

Graphics: ****

The graphics are colourful, sharp, and detailed. However, there is minimal movement and it has a flat quality to it. The graphics are clearly better than the IBM version and fill up the full screen rather than a dinky window (Jags don't do windows!)

Game Play: ***

Myst is fun and challenging, but perhaps a little too challenging. Since I was experienced at the IBM version I was already well equipped to play the game, but trust me - even leaving the first island (which is a trivial part of the game) is extremely difficult. Ideally a game should be on an exponential curve in which the first little bit is quite easy but it gets increasingly more difficult as it goes along. The game play is also a slight bit on the linear side compared to many other adventure games in this same genre. There is only one exact precise way through Myst, and a lack of choices hurts it. However, the puzzles that are in it are quite fun to solve.

Overall: 12/15

Despite its shortcomings it is still a good game. I feel that it is probably the best CD title to come out for the Jaguar so far and if you have both a Jag and an IBM there is certainly no reason to buy it for the IBM over the Jaguar.

H.B.O. Treasurer Report

By Randy Charlebois Secretary/Treasurer

H.B.O. ATARI USERS GROUP
FINANCIAL REPORT
FEBRUARY 1996

For the month ending February 1996 our fiscal balance was $173.96 with no outstanding debts. Our major expense this month was the P.O. Box. Meeting expenses include pop, donuts, raffle prizes and the newsletter. Our revenue comes from memberships, raffles, 50/50 draws, and disk sales.

Help support the club by buying disks from the library and draw tickets. A volunteer to run the draws and raffles would be greatly appreciated. Thanks to those who bought raffle tickets last meeting. If you have recently joined the H.B.O. welcome to the club. You will get your money's worth and more.

Our funds are adequate at the present to continue our club. Involvement by our members will allow us to support new and old users. Donations of Raffle prizes would be appreciated.

Word Processing On The Atari ST Computers

By Glen Atwell

The Atari ST line of computers can still compete with mainstream computing in the area of word processing. Although there is a limited number of fonts available for 520 ST's due to their limited memory capacity, a person can still achieve good results in a printed document.

What must be kept in mind, is that a simple interface with the user keeps the writer concentrated on the material that he writes, and not the mechanical requirements of the program.

IBM PC based word processors are difficult, if not impossible to configure. Much creativity in content can be lost when the writer has to be concerned with what is happening on the screen. This approach to a simplified user interface is now under development with "smart agents". A smart agent is a program which finds information on the Internet while you write.

However, if you would rather make simple decisions for yourself, and not rely on computer intelligence, then pull up to your ST and start writing!

Unfortunately, there are fewer developers of Atari Software today, as the ST market declines. Timeworks, who once made the handy Word writer ST program no longer supports the Atari.

For quite a long time, Word Writer ST was perhaps the **best** word processing program for the ST. It was a fine replacement for 1ST Word. Word Writers major weakness was that it did not continue to develop for use in a multitasking MINT or MultiTOS environment. Word Writer, however, was well written and runs without much trouble under MultiTOS.

Another downside to Word Writer is that it never developed SpeedoGDOS fonts. (Fonts are those fancy shaped styles of letters) It relied on the Atari supplied GDOS support which was very slow and did *not* use a scalable sized font system.

This ability to use scalable fonts is what makes a word processing document look great on paper. Printer drivers for modern bubble and ink jet printers are also important. A modern ST word processor must be able use SpeedoGDOS drivers and fonts or at least provide their own.

Compo Software does just that with its program That's Write version 3 and above. Compo, a European import to North America, has come up with a system that bypasses MultiTOS and makes its own "NO SYSTEM" files. It is also compatible with the newer versions of SpeedoGDOS that incorporate PostScript type 1 fonts.

Its support of printers is also very impressive. Drivers included in That's Write include Cannon Bubblejet printers, HP DeskJet printers, HP LaserJet printers and Atari laser printers. The software supports resolutions of 360x360 dpi and 600x600 dpi which is far beyond the screen resolution of the Atari ST.

That bring us to the topic of screen images. Compos That's Write 3 is WYSIWYG! That is, *What You See Is What You Get.* What is on the screen is print out. Some very good word processors are still using a different system whereby you have to *guess* at how the page is going to appear on paper. Therefore, you must run a *test* to determine the quality of the Printout.

Other ST word processors such a "Redacteur" from France are available in high (MONO) resolution *only* and do not support colour monitors.

For plain text mono is very easy to read on a screen and the quality of the printed output is adequate so programs such as WordPRO, with its large set of drivers is an easy choice for those on a budget. However the ability to import graphics and see them on the page is the domain of That's Write 3.

Compos product will allow you to choose an .IMG file and drop it on a page. You can then flow your text around the outside of the picture and see the effect on screen. In order to import the more popular .PCX file you must first convert them with a utility in order to import the files into That's Write.

That's Write will also generate an index file and a table of contents for you automatically. It saves its formatted files with a .TW extension . For cross platform compatibility, ASCII is also available for plain .TXT and DOC files, should you wish to export them to another machine for editing or printing.

That's Write 3 has a very large help file area to walk you through the program, but you will not require as much

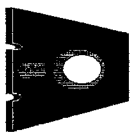
help as you would for a PC. The pull down menus are arranged in a familiar Atari ST style that is as comfortable to use as most GEM based programs.

That's Write is *fast,* and it multi tasks well enough to be able to jump from one task to another without much hassle, so you can work on several documents at the same time.

Best of all, Compo is still in business so you can write to them for support and upgrades. Of all the editors and word processors that I have used, That's Write 3 is the best. I recommend it without reservation.

COMPO Software
104 Esplande Ave.
Suite 121
9044 Pacifica California
Tele:415- 355 -0869

Atari 8-Bit Librarian Report



By Randy Charlebois

This month I'll cover the EDUCATIONAL section of the library which consists of 17 disks so far. They are divided into 5 sub-sections consisting of SCIENCE, MATH, SPACE, KIDS, and MISC.

The SCIENCE section consists of four disks which cover from Dinosaurs to Volcanoes, the Atmosphere to the Hydrosphere, and almost everything in between.

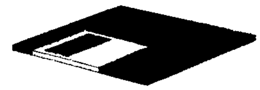
For MATH we have three disks to help with Counting and other mathematics skills. Learn addition, multiplying, fractions, and equations in games and drills.

SPACE is three disks which help you plot the SUN, MOON, and the STARS. Calculate orbits and trajectories for objects and projectiles.

Teach your KIDS French, Math, Adding, and Telling Time with the two disks in this area. Under MISC. we have databases for countries and animals of the world. Quizzes cover geography, flags, First Aid and Chemistry. Tutorials cover programming, typing, and the ATARI computer.

Next month I'll cover another section of the Library. Remember buying disks helps your club and provides you with excellent software at an affordable price.

Atari ST Librarian Report



By Roger Perrie

Editor's Note: The ST librarian failed to submit a report for this quarter. If ST owners want to see things for their machine in PRINT, they must become active members of their club.

Midi Notes



By Ron Palangio

Want to get into MIDI? Why buy a Pentium when there's the ST?

My brother and I used to play in a band together when we were teenagers, he played keyboards and I played guitar. We both became high school teachers, I teach music and still play in a band, he teaches technological studies and gave up playing after graduating high school. A few years ago he came to visit. I showed him my MIDI set up. He seemed impressed, but kind of snickered at my ST, and asked why I didn't have a PC. After a quick demonstration, he changed his tune and spent the next three hours composing music.

Even though he hadn't played in years, or had ever used an Atari, he was having a ball making music. He immediately went out and bought a synthesizer and an 8 track sequencer (he couldn't afford the computer).

For the next five years this little set up was good enough for his music making purposes. Last summer he spent $3,800,00 on a 100Mhz Pentium multi-media monster as well as a sound module, sound card and MIDI interface. He phoned me long distance from North Bay to ask how to get things going, and what software to buy. Being a Notator user I suggested he try the new Windows version of Notator Logic by E-Magic. (He got the entry level version, Micro Logic). I told him to wait until I came up to visit in two weeks and we'd try to get things started.

When I got there the extent of his MIDI activity was puttering with the sounds on his new module. He hadn't even plugged into the computer yet! We spent over three

hours setting up the MIDI interface and installing drivers. After attempting to install Micro Logic, we erased the entire boot sector of his 1 Gigabyte hard drive. It seems that this program doesn't accept any foreign drivers or boot sector commands other than its own. I don't know what E-magic was doing when they wrote this program, it's no Notator. I snickered and said "why didn't you get an ST?" he shouted a few obscenities, turned bright red and told me to shut up.

After a few days he got things relatively stable and started making music (without Micro Logic) on a shareware MIDI application he found on the Internet. To me, the speed of the Pentium with Windows wasn't really noticeable when working with MIDI. The colour VGA graphics were nice and so was the ability to multi-task. However, screen graphics aren't really important when doing music.

High resolution monochrome is all that is needed for a clear note display. As far as Multi-tasking, with a 4 meg ST you can easily task-switch using the Link-Edit program that comes with Notator or use any number of Multi-tasking programs available.

After testing several MIDI demo programs written for Windows, I found that most, if not all of the features available on these sequencing and notation programs are standard on an ST with Notator or other like applications. And remember, you don't need to install a MIDI interface or software drivers etc. on an ST, you just plug in and start jammin'!

If you plan on exploring MIDI and feel you need to fork out close to four grand on a Pentium system, think twice, and check out the ST. Ten years after its introduction, the Atari ST remains a formidable and useful MIDI platform.

I think I'll keep my ST and my ***money!***

RAM/ROM Control on XL/XE

By John Picken

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Let's first look at what you've got to play with as far as extra RAM, how it's done, and what kind of problems you can run into. No matter how much memory is installed in your computer, the 6502 can never access an address outside the range 0-65535 (64k). With BASIC off, this limits normal RAM to 48k as the Operating System (OS) and hardware chips take up the last 16k. With BASIC on, or a cartridge installed, you lose yet another 8k.

Software like SpartaDos and Turbo BASIC utilize another 14k of RAM by de-selecting the OS. As far as I know, nobody ever produced 6, 14, or 62k chips so there has to be another 2k of RAM in there. The only way you can de-select the hardware registers is with the power switch.

Since the 6502 can't "see" extra memory, you have to trick the computer into believing it's not seeing what it is, which is how all software that uses extra RAM works. It operates by "bank switching", a concept more understandable with a memory map so here's a rough picture of the 64k address range in your computer broken up into four 16k "banks": See Illustration #1

Bank #	Address Dec	Range Hex	Usage
0	00000 16383	$0000 $3FFF	RAM for OS, DOS and user programs
1	16384 32767	$4000 $7FFF	User RAM Some ROM is self-test enabled
2	32768 49151	$8000 $BFFF	User RAM. Top half is ROM if BASIC on
3	49152 65535	$C000 $FFFF	OS ROM + I/o chips User RAM if OS off

<u>Illustration #1</u>

Usage indicates the only bank which is almost always all RAM and can safely be switched in or out is number 1, which is exactly how the 130XE is designed. Its extra RAM is divided into four 16k banks, each of which can replace normal memory in bank 1. In effect, the 130 memory map looks like this: See illustration #2



```
==========================================
| Main     Extended Memory                 |
| ------                                   |
| | m0 |                                   |
| -------------------------                |
| | m1 | x0 | x1 | x2 | x3|                |
| -------------------------                |
| | m2 |                                   |
| ------                                   |
| | m3 |                                   |
| ------                                   |
==========================================
```

Illustration #2

Compatible memory upgrades are mapped in the same way. The only difference is that there are more extended banks--up to 64 with 1 Meg. Each bank when switched in, appears as main bank 1. The diagram is slightly misleading in that it implies the extra banks sort of slide into place one after another -- they don't. Any one can be selected in any order you wish.

Switching RAMs and ROMs is physically simple. Almost all control is handled by a single hardware address known as PORTB (54017 or $D301). The bits in PORTB
have the following functions on a 130XE:

```
Bit #  7    6    5    4    3    2    1    0
      -------------------------------
Usage| T | y | x | E | j | I | B | O |
      -------------------------------
Dec.  128   64   32   16   8    4    2    0
```

Bit O is used by Sparta and Turbo to toggle between RAM and ROM to make use of that hidden 14k. This requires a juggling act since the OS interrupt handlers are in ROM and must be re-enabled, 60 times per second, to avoid a crash, or else the program must provide its own interrupt handlers. Additionally, since Antic updates the screen before the 6502 gets to process the interrupt, it is necessary to use an alternate character set in lower memory or to copy the ROM one into RAM at the same address. Bit 1 (B) if low enables the BASIC ROM.

To figure values in PORTB you add the decimal values under each bit to be set to 1. Since, with all bits set, the total is 255, it's often simpler to subtract. PEEK (54017) in BASIC will produce 253 meaning everything's high except bit 1. The same PEEK with Turbo gives 255 as the BASIC ROM is off. This is the only bit you normally see change. Bit 7 (T) if low enables Self Test ROM.

As with RAM, there has to be 2k of ROM left over. There is, and it's used for part of the Self Test routines. When bit 7 is low, it's enabled. Since hardware registers can't be deselected, this portion of ROM deselects and replaces RAM from $5000-$57FF in bank 1. Unless you're really into listening to simple music, a really slow and incomplete RAM test, or watching keys flash on an image of a 1200 XL keyboard, you can consider this 2k of ROM to be free space if designing an OS upgrade. Bit 4 (E) if low enables extra RAM. Bit 4 is the master switch for extra memory. No matter what values are in the other bits, the 6502 will always use normal memory when this bit is high. Bits 3 and 2 (ji) select one of four 16k banks. These bits together determine which one of the four 16k banks is enabled. They simply count from 0 to 3 in binary where, if j is set you add 2, and if I is set you add 1:

j	I	bank
0	0	0
0	1	1
1	0	2
1	1	3

Here's what the memory map would look like with bits 3 and 4 low (remember the 6502 only "sees" the RAM in the "Main" column). Illustration #3 follows:

```
------
| m0 |
------ ----- ----- ----- -----
| x1 |  x0  | x1  | x2  | x3  |
------ ----- ----- ----- -----
| m2 |
-----      Illustration #3
| m3 |
------
```

Bit 5 (x) enables Antic access. On a 130XE, each of the four extra banks can be assigned individually to either Antic or the 6502 or to both, a setup that is rarely used -- forget about them if you only have a 130. On the 130 these bits are normally set to one. Bit 6 (y) does nothing.

BEYOND LIKE THE 130

Once you exceed 64k extra RAM you need more bits so the upgrade designers took the bits that I just told 130 owners to forget about. Bits 6 and 5 (yx) select one of four 64k blocks. These work similarly to 2 and 3 except that you use them to select one of up to four 64k blocks

and within each of these, you use bits 2 and 3 to select one of the four 16k banks (just as for the 130). Because the 130 normally keeps these bits high, their sense is reversed from that of 2 and 3. Don't worry about the difference, all you need to know is which values work for your upgrade. The following bit patterns work for 256XL upgrades:

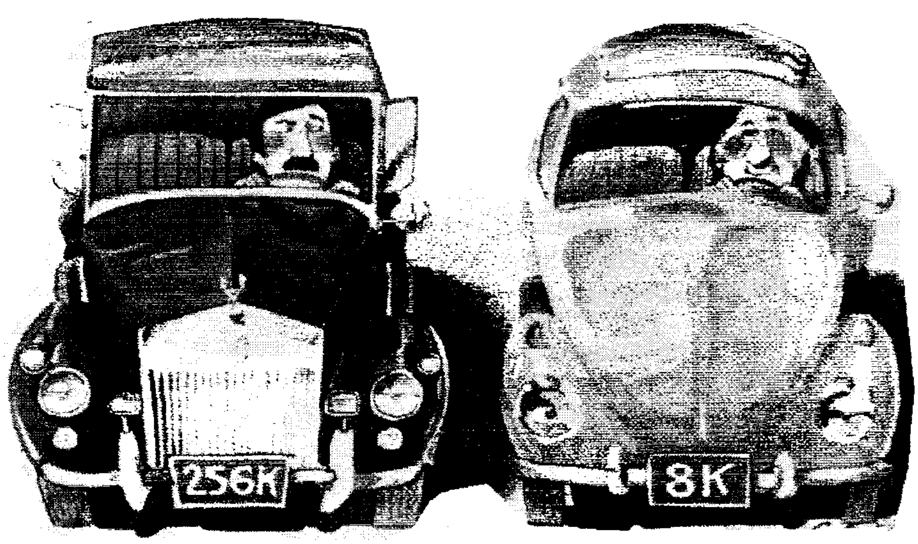
y	x	64kBlock	Available On:
1	1	0(130XE)	All
1	0	1	All
0	1	2	*B/P/R
0	0	3	Newell

* Bucholtz/Peterson/Rambo

256 XL PROBLEMS

With a Bucholtz/Peterson/Rambo 256XL you can run into a significant problem enabling the third extra block. If your software is set up for a Newell, not only will you not be able to use the third block, but any attempt to do so results in various other main banks showing up as main bank 1. What you end up with is a mapping like the following which results from attempting to access extended bank x8 using Newell bit patterns:

```
Main              64k Blocks
       0            1           2
------
| m0 | Extended RAM Banks (hex)
------------------------------
| 0  |0|1|2|3|4|5|6|7|8|9|A|B|
------------------------------
| m2 |
------
| m3 |
------
```



Obviously, this is a prelude to disaster as trying to write to bank x8 will overwrite DOS or the OS low RAM storage. Similarly, attempting to write to bank B could write to the hardware chips. With the Newell upgrade, wrong bit patterns enable Antic access to the extra RAM which should be harmless as the display list and screen RAM are rarely in this address range. It still however, restricts extra RAM usage to 128k.

So if you're having RAMdisk problems with a 256XL, odds are you're using the wrong software. ICD put out separate versions of their RD handler to address this and you need to obtain the correct one. With MYDOS you won't have a problem if you use the default RD configuration (menu item "O") but if you select a custom sequence or enter one manually, you must be aware of which banks are available.

UP TO A MEG

If you've been keeping count, you can see there's no more bits available in PORTB. To get past 256k, the designers decided to take over the BASIC bit, and to go to a meg, the Self Test bit.

B if 0 enables the second 256k.
T if 0 enables the second 512k.

If both of these are high, you're in the first 256k. If bit 7 is low and bit 1 high, you're in first half of the second 512k (third 256k), etc.

BEFORE YOU UPGRADE

You might run into a problem with bit 7 if you have installed a custom operating system chip: It may be used, by the chip, for other purposes such as switching in its own RAMdisk handler or display handler. Check this out before investing in an upgrade past 576k. Also, there are some XE's on which the 1-Meg upgrade does not work. I have not experienced

this personally, but have read message traffic about it which implicated the model of the Antic chip installed. If you're unsure, ask questions first.

ACCESSING LIKE THE BANKS

Rather than figure bit patterns, it's a lot simpler to use a table. The one following gives the access value for every possible bank up to 1 Megabyte. The values are with the OS on and BASIC (if present) off. They are given in hex and are exactly the values needed to set up a MYDOS RAMdisk for the banks you have and wish to assign to the RD.

RAM BANK ACCESS TABLE
64-1024K

PORTB	Available on Type
E3,E7,EB,EF	1,2,3,4,5,6,7,8
C3,C7,CB,CF	2,3,4,5,6,7,8
A3,A7,AB,AF	2, 4, 5,6,7
83,87,8B,8F	3,4,5,6,7
E1,E5,E9,ED	5,6,7
C1,C5,C9,CD	5,6,7
A1,A5,A9,AD	5,6,7,8
81,85,89,8D	5,6,7,8
63,67,6B,6F	6,7
43,47,4B,4F	6,7
23,27,2B,2F	6,7
03,07,0B,0F	6,7
61,65,69,6D	7
41,45,49,4D	7
21,25,29,2D	7
01,05,09,0D	7

Type	Upgrade Mapping
1 = 130XE	
2 = 256 XL	Buch./Peter./Rambo
3 = 256 XL	Newell
4 = 320 XE	Peterson
5 = 576 XE	Peterson
6 = 832 XE	Peterson
7 = 1088 XE	Peterson
8 = 768 k+	Peterson (BASIC on)

Note 1: The documentation by Scott Peterson on his one Meg upgrade indicates that only 128k is available in XE compatible mode (Type 8 above). Two more 64k blocks are available as indicated though not all RD handlers find and use them.

Note 2: Based on the article by Jeff McWilliams in the April 1993 edition of AC, it appears the Newell 1-Meg upgrade is mapped similarly to the Peterson.

Note 3: With version 2.1 of the SpartaDOS Wedge, Ed Bachman describes a simple fix for Peterson upgrades to re-enable Antic access to extended RAM. It is definitely worth checking out, even if you don't use Sparta.

MAJOR RAM - MAJOR GLITCH

Taking the BASIC bit caused a serious problem which has not been well documented. I found it the hard way: trash and crash. While the computer boots, the OS does not test to see if BASIC exists and is available. The result is that even though pointers for the screen and so on are correctly set, bit 1 in PORTB is set or cleared based solely on the Option key. The BASIC flag is similarly set so that PORTB is restored to the booted value on Reset.

With a 512k+ upgrade this means the instant you enable extra RAM by dropping bit 4 in PORTB, you're in the second 256k instead of the first. If you use your extra memory only as a RAMdisk this mixup might not cause a problem depending on the handler code. But unless it's fixed, before using any other program which accesses extra RAM, 99% of them will trash your RD if they don't completely crash the computer.

FIXING IT

You can't just correct PORTB since Reset restores it. You have to get a non-zero value into BASICF (1016 or $03F8). The problem is compounded under SpartaDos which maintains an eight byte stack of PORTB values for exit from various internal routines.

One solution is to hold Option every time you boot. Under SpartaDos with no cartridge, a BASIC OFF followed by a Reset should fix it. With a cartridge, find a way to stuff a non-zero value into BASICF and then press Reset.

I personally, always build in a test routing to programs which are going to manipulate RAM/ROM to ensure that BASICF and PORTB are correctly set if BASIC is off or absent. In addition, I search and correct the stack in Sparta. Bobterm 1.22 corrects the Sparta stack for version 3.2d/f but, as it uses the absolute addressing, this might lead to problems with later SpartaDos versions. So, if you have a problem with BT and Sparta, the answer might be to switch to version 3.2d/f.

The way I find the stack in Sparta is to look for a LDA PORTB instruction, followed by a STA ADRESS,X where ADDRESS will be the address of the stack. With version 3.2+ you should find it on page 7; with version 2.3, it's on page 9. Once found, it's a simple matter to set bit 1 in each of the eight values correctly.

Continued Next Issue

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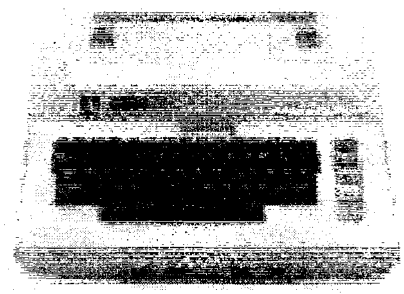
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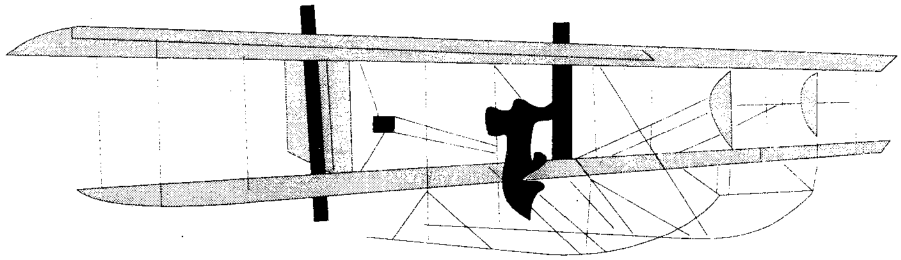


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